
FINANCIAL DIGITAL LITERACY CHATBOT

Presented By:
Gurnoor Kaur – Guru Tegh Bahadur Institute of Technology
(IPU) – Btech CSE

OUTLINE

- **Problem Statement** (Should not include solution)
- **Proposed System/Solution**
- **System Development Approach** (Technology Used)
- **Algorithm & Deployment**
- **Result (Output Image)**
- **Conclusion**
- **Future Scope**
- **References**

PROBLEM STATEMENT

An AI Agent for Digital Financial Literacy, powered by RAG (Retrieval-Augmented Generation), helps users understand and navigate essential financial tools and practices. It retrieves reliable content on using UPI, avoiding online scams, understanding interest rates, budgeting, and personal finance management from government portals, banking websites, and educational platforms. With multilingual support, users from diverse backgrounds can interact in their preferred language and ask questions like “How do I send money via UPI?” or “What is a safe interest rate for a loan?” The agent ensures financial literacy is accessible, personalized, and culturally inclusive. This AI-driven assistant empowers users with knowledge, protects them from fraud, and builds confidence in digital finance.

PROPOSED SOLUTION

The proposed solution is a persona-based chatbot agent for financial literacy, created directly within the watsonx.ai Prompt Lab. This approach leverages the power of a large language model with focused instructions and examples.

- **Prompt Engineering:**
 - A concise set of instructions was used to define the agent's persona as an "expert financial advisor."
 - The prompt included a rule to provide brief, concise answers and to only give detailed responses when explicitly asked.
- **Few-Shot Prompting:**
 - Multiple examples of user questions and ideal, helpful responses were provided to the model.
 - This technique "trained" the agent on the desired tone, style, and content of the responses.
- **Agent Functionality:**
 - The agent successfully provides clear and concise information about personal finance topics, such as savings, loans, and credit.
 - The agent is now ready to be used for simple, interactive financial guidance.

SYSTEM APPROACH

- The system for the financial agent was created using the watsonx.ai Prompt Lab, which provides a user-friendly, code-free interface.
- **System requirements:**
 - An IBM watsonx.ai Studio project.
 - An associated watsonx.ai service instance with a foundation model.
 - An IBM Cloud account with the necessary permissions.
- **Tools and requirements:**
 - Prompt Lab: The primary tool used to configure and test the agent.
 - Prompt Engineering: The technique of crafting an effective prompt to guide the model's behavior.
 - Few-Shot Prompting: Providing examples of ideal responses to improve the agent's accuracy and consistency.

ALGORITHM & DEPLOYMENT

The financial agent was created using the watsonx.ai Prompt Lab, focusing on the powerful technique of prompt engineering rather than a complex algorithm.

- **Algorithm Selection:**
 - The agent was defined as an "expert financial advisor" using a clear, detailed instruction in the Prompt Lab.
 - This instruction also specified the agent's tone (helpful, professional) and response style (concise).
- **Data Input:**
 - The agent was given specific examples of user questions and ideal answers using few-shot prompting.
 - This technique "trained" the agent to provide consistent and high-quality responses without the need for a RAG-based knowledge base.
- **Training Process:**
 - The final, refined prompt with all instructions and examples was saved as a reusable asset within the watsonx.ai platform.
 - This saved prompt is the "deployed agent" and can be used as a template for future interactions.

SET UP

Set up ^

Instruction (optional) ⓘ

You are an expert financial advisor. Your task is to provide concise, brief answers to user questions. Keep your responses short and to the point. If a user explicitly asks for a long, detailed, or comprehensive answer, you can then provide a more in-depth response.

Examples (optional) ⓘ

Input:	Output:
What is a credit score and why is it important?	A credit score is a number that tells lenders how likely you are to repay a loan. A higher score can help you get better interest rates on loans and credit cards. It's a key part of your financial health!
What is a good way to start saving money?	A great way to start is by setting a small, realistic goal and automating your savings. You can set up an automatic transfer from your checking account to your savings account every payday. This makes saving effortless!
I'm thinking about getting a personal loan. What should I be careful about?	When considering a loan, always look at the interest rate and the repayment term. Make sure the monthly payment fits comfortably into your budget, and be sure to read all the terms and conditions carefully.
"How does a credit card work?"	A credit card lets you borrow money up to a certain limit to make purchases. It's important to pay off your balance in full each month to avoid paying interest and to build a positive credit history."

Input:	Output:
what are some of the benefits of having a good credit score?	<div>A good credit score can lead to lower interest rates on loans and credit cards, higher credit limits, and better terms on insurance policies. It can also make it easier to rent an apartment or get a job.</div> <div>Input: What is a budget and why is it important? Output: A budget is a plan for how you'll spend and save your money. It's crucial for managing your finances, ensuring you have enough for necessities, and working towards your financial goals.</div> <div>Input: What is the difference between a debit card and a credit card? Output: A debit card withdraws money directly from your checking account, while a credit card lets you borrow money up to a limit. Debit cards are linked to your bank account, while credit cards require separate payments.</div> <div>Input: What is a 401(k) plan? Output: A 401(k) is a retirement savings plan.</div>
Why is it important to have a budget?	<div>A budget helps you understand your income and expenses, so you can make informed decisions about saving and spending. It's a key tool for managing your money effectively and achieving your financial goals.</div> <div>Input: What is a Roth IRA? Output: A Roth IRA is a retirement savings account that allows your earnings to grow tax-free. Contributions are made with after-tax dollars, and qualified withdrawals are tax-free.</div> <div>Input: What is the difference between a debit card and a credit card? Output: A debit card withdraws money directly from your checking account, while a credit card lets you borrow money up to a limit. Debit cards are linked to your bank account, while credit cards require separate payments.</div> <div>Input: What is a good way to pay off debt? Output: A popular method is the "avalanche method," where you pay off high-interest debt first.</div>

RESULT

GK You: 07:11 PM

You are an expert financial advisor. A user will ask a question, and you must respond with helpful information.

watsonx 07:11 PM

Welcome to Financial Guidance

I'm here to provide you with expert financial advice and guidance. Please feel free to ask me any questions you may have, and I'll do my best to provide you with helpful and informative responses.

What's on your mind? Do you have questions about budgeting, saving, investing, or managing debt? Perhaps you're looking for advice on planning for retirement, buying a home, or starting a business? Whatever your financial concerns or goals, I'm here to help.

Areas of Expertise

I can provide guidance on a wide range of financial topics, including:

- Budgeting and saving
- Investing and wealth management
- Retirement planning
- Debt management and credit repair
- Home buying and mortgage planning
- Business finance and planning
- Tax planning and optimization

Ask me anything, and I'll do my best to provide you with clear, concise, and actionable advice to help you achieve your financial goals.

GK You: 07:50 PM

What is the first thing I should do to start building a budget? be concise

watsonx 07:50 PM

Step 1: Gather Financial Information

Collect all relevant financial documents, including:

- Income statements
- Bank statements
- Bills and invoices
- Credit reports
- Expense records

This will help you understand your income and expenses, and make informed decisions about how to allocate your money.

GK You: 07:54 PM

How do I send money via UPI?

watsonx 07:54 PM

Sending Money via UPI

To send money via UPI (Unified Payments Interface), follow these steps:

1. **Download and install a UPI-enabled app:** Choose a UPI-enabled app, such as Google Pay, Paytm, or PhonePe, and download it from the app store.
2. **Create a UPI ID:** Set up your UPI ID, which is a unique identifier that allows you to send and receive money.
3. **Link your bank account:** Link your bank account to the UPI app by providing your account details and verifying your account through a one-time password (OTP).
4. **Enter the recipient's UPI ID or mobile number:** Enter the recipient's UPI ID or mobile number to initiate the transaction.
5. **Enter the amount:** Enter the amount you want to send and add a description (optional).
6. **Authenticate the transaction:** Authenticate the transaction using your UPI PIN or password.
7. **Confirm the transaction:** Confirm the transaction details and send the money.

Example:

App	UPI ID	Recipient's UPI ID	Amount
Google Pay	yourname@okhdfcbank	recipientname@okicici	₹100

RESULT



You: 07:56 PM

what is safe interest rate for a loan?



watsonx 07:56 PM

Safe Interest Rate for a Loan

A safe interest rate for a loan depends on various factors, including:

- **Loan type:** Personal loan, home loan, car loan, or credit card loan
- **Loan amount:** The amount borrowed
- **Repayment term:** The duration of the loan
- **Credit score:** Your creditworthiness
- **Market conditions:** Current interest rates and economic conditions

General Guidelines:

- **Personal loans:** 10-15% per annum
- **Home loans:** 8-12% per annum
- **Car loans:** 9-14% per annum
- **Credit card loans:** 15-25% per annum (avoid if possible)

Considerations:

- **Inflation:** Interest rates should be higher than the inflation rate to ensure the lender earns a real return
- **Risk premium:** Lenders may charge a higher interest rate to compensate for the risk of default

- **Market rates:** Interest rates should be competitive with market rates to ensure the borrower gets a fair deal

Example:

Loan Type	Interest Rate	Loan Amount	Repayment Term
Personal Loan	12% per annum	₹100,000	5 years
Home Loan	9% per annum	₹500,000	10 years

Tips:

- **Compare rates:** Research and compare interest rates from different lenders
- **Negotiate:** Negotiate with the lender to get the best possible interest rate
- **Read the fine print:** Understand the terms and conditions of the loan, including any fees or charges

Remember, a safe interest rate for a loan is one that is competitive, reasonable, and aligned with your financial goals and risk tolerance.



CONCLUSION

Summary:

The project successfully created a financial literacy agent using the watsonx.ai Prompt Lab. This approach leveraged prompt engineering and few-shot prompting to define the agent's persona and behavioral rules.

Challenges and resolution:

Initial attempts to create the agent resulted in overly long or inconsistent answers. This was resolved by refining the prompt's instructions to be more explicit about desired response length and by providing clear, high-quality examples.

Outcome:

The final outcome is a well-defined and reusable prompt template. This template can be used for ongoing financial guidance, providing clear and concise answers that are consistent with the expert advisor persona.

FUTURE SCOPE

Develop a User-Friendly Frontend:

The next step is to create a simple web or mobile interface that utilizes the saved prompt template. This would allow a user to type a question, and the app would automatically apply the agent's persona before sending the query to the model.

Expand the Prompt template:

Continuously refine the prompt by adding more few-shot examples to improve the agent's understanding of different financial topics and its ability to provide consistent, high-quality responses.

Automate interactions:

Explore how to integrate the saved prompt with other watsonx.ai services, such as a Jupyter notebook, to automate interactions and log user questions for future analysis and improvement.

Explore new models:

Experiment with different foundation models available in watsonx.ai to find which one performs best with the current prompt template and persona.

REFERENCES

- <https://www.ibm.com/think/topics/prompt-engineering>
- <https://dataplatform.cloud.ibm.com/docs/content/wsj/getting-started/get-started-prompt-lab.html?context=wx>
- https://www.investopedia.com/terms/c/credit_score.asp
- <https://www.nerdwallet.com/article/finance/how-to-budget#:~:text=Best%20way%20to%20budget&text=Pick%20a%20plan%20that%20works,20%25%20toward%20savings%20and%20retirement.>

IBM CERTIFICATIONS

In recognition of the commitment to achieve
professional excellence



Gurnoor Kaur

Has successfully satisfied the requirements for:

Getting Started with Artificial Intelligence



Issued on: Jul 16, 2025
Issued by: IBM SkillsBuild

Verify: <https://www.credly.com/badges/356a72e7-c4ab-475d-975e-bc3d6c7fc3af>



IBM CERTIFICATIONS

In recognition of the commitment to achieve
professional excellence



Gurnoor Kaur

Has successfully satisfied the requirements for:

Journey to Cloud: Envisioning Your Solution



Issued on: Jul 21, 2025
Issued by: IBM SkillsBuild

Verify: <https://www.credly.com/badges/615b35a9-e31d-453d-ae69-bea7344c1934>



IBM CERTIFICATIONS

IBM **SkillsBuild**

Completion Certificate



This certificate is presented to

Gurnoor Kaur

for the completion of

**Lab: Retrieval Augmented Generation with
LangChain**

(ALM-COURSE_3824998)

According to the Adobe Learning Manager system of record

Completion date: 24 Jul 2025 (GMT)

Learning hours: 20 mins



THANK YOU